

## SOT-223 Plastic-Encapsulate Transistors

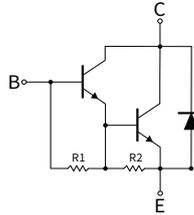
### ● Features

- High DC Current Gain
- Built-in a Damper Diode at E-C
- Complementary to CZT127

### ● Mechanical Data

- Case: SOT-223  
Molding compound meets UL 94V-0 flammability rating, RoHS-compliant, halogen-free
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026

### ● Function Diagram



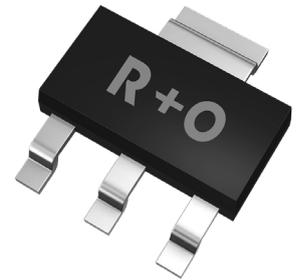
### Collector-Emitter Voltage

V<sub>CEO</sub> 100V

### Collector Current

5.0 Ampere

### SOT-223



### ● Ordering Information

| PACKAGE | PACKAGE CODE | UNIT WEIGHT(g) | REEL(pcs) | BOX(pcs) | CARTON(pcs) | DELIVERY MODE |
|---------|--------------|----------------|-----------|----------|-------------|---------------|
| SOT-223 | R3           | 0.125          | 2500      | 5000     | 50000       | 13"           |

### ● Maximum Ratings (Ta=25°C Unless otherwise specified)

| PARAMETER                   | SYMBOL           | UNIT | VALUE     |
|-----------------------------|------------------|------|-----------|
| Collector-Base Voltage      | V <sub>CBO</sub> | V    | 100       |
| Collector-Emitter Voltage   | V <sub>CEO</sub> |      | 100       |
| Emitter-Base Voltage        | V <sub>EBO</sub> |      | 5.0       |
| Collector Current           | I <sub>C</sub>   | A    | 5.0       |
| Collector Power Dissipation | P <sub>C</sub>   | W    | 1         |
| Storage temperature         | T <sub>stg</sub> | °C   | -55 ~+150 |
| Junction temperature        | T <sub>j</sub>   | °C   | -55 ~+150 |

### ● Electrical Characteristics (Ta=25°C Unless otherwise noted)

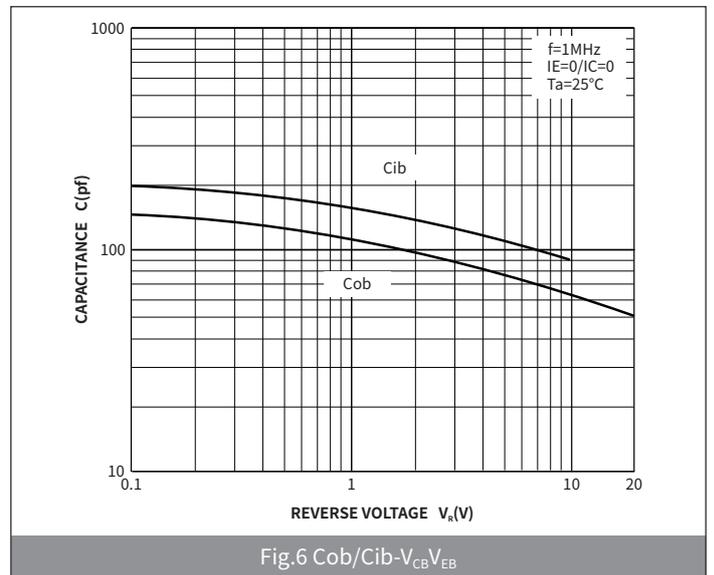
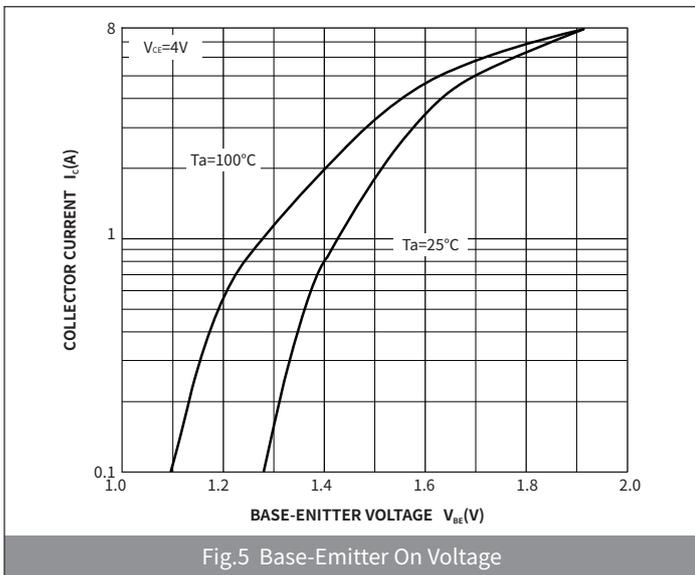
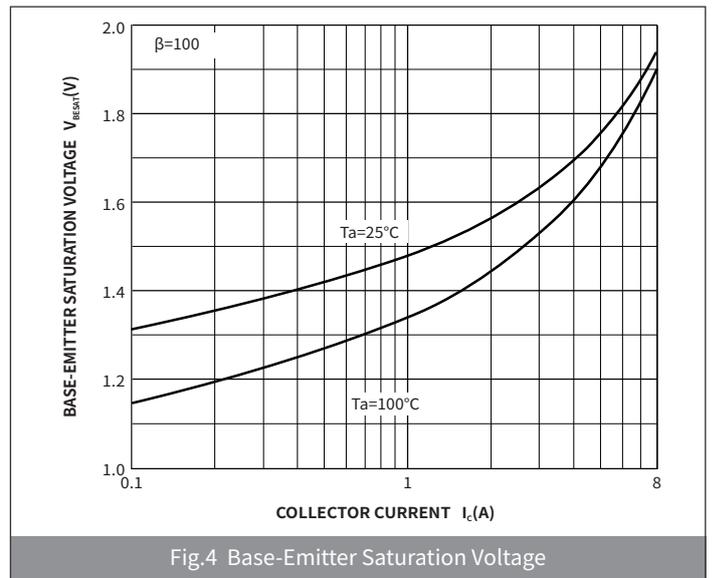
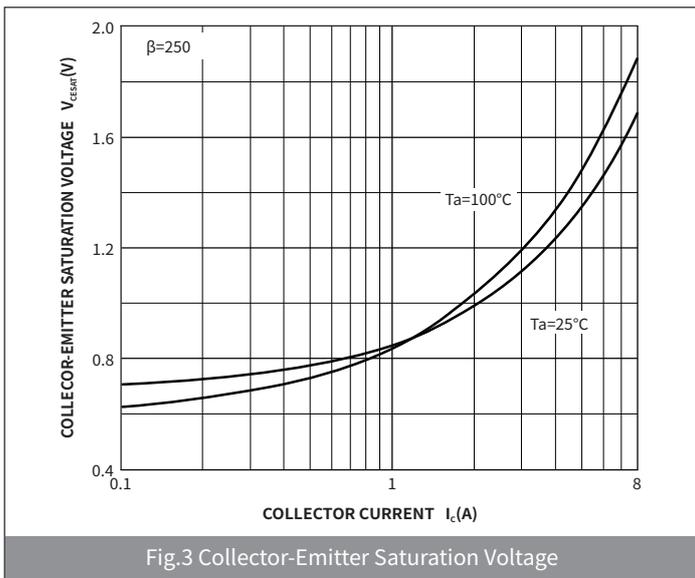
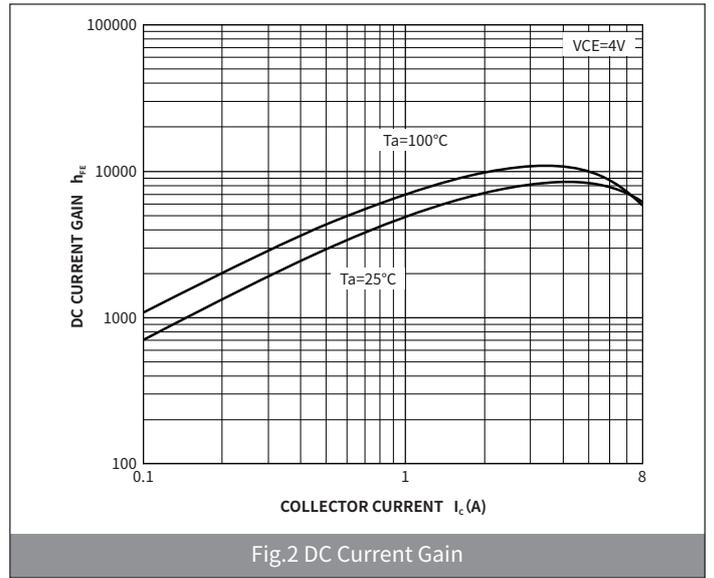
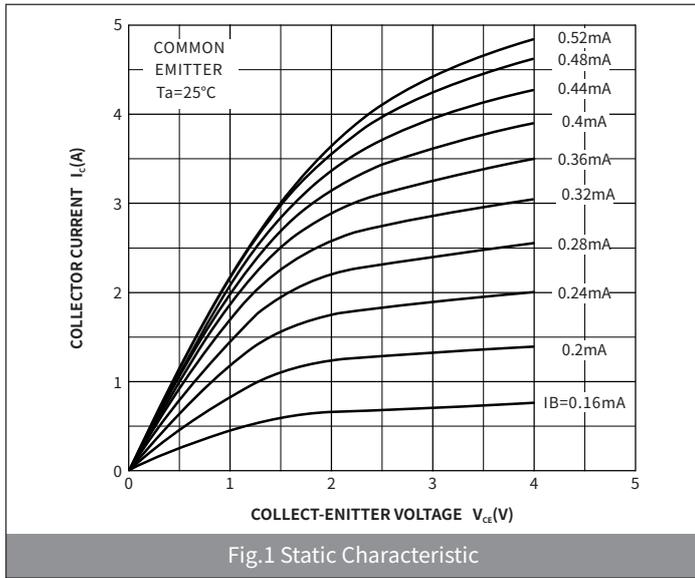
| PARAMETER                            | SYMBOL        | UNIT | Condition                   | Min  | Typ | Max |
|--------------------------------------|---------------|------|-----------------------------|------|-----|-----|
| Collector-Base Breakdown Voltage     | $V_{(BR)CBO}$ | V    | $I_C=1mA, I_E=0$            | 100  | —   | —   |
| Collector-Emitter Breakdown Voltage  | $V_{(BR)CEO}$ | V    | $I_C=30mA, I_B=0$           | 100  | —   | —   |
| Collector-Base cut-off current       | $I_{CBO}$     | mA   | $V_{CB}=100V, I_E=0$        | —    | —   | 0.2 |
| Collector-Emitter cut-off current    | $I_{CEO}$     |      | $V_{CE}=50V, I_E=0$         | —    | —   | 0.5 |
| Emitter-Base cut-off current         | $I_{EBO}$     |      | $V_{EB}=5.0V, I_C=0$        | —    | —   | 2   |
| DC Current Gain                      | $h_{FE(1)}$   | —    | $I_C=500mA, V_{CE}=3.0V$    | 500  | —   | —   |
|                                      | $h_{FE(2)}$   | —    | $I_C=3.0A, V_{CE}=3.0V$     | 1000 | —   | —   |
|                                      | $h_{FE(3)}$   | —    | $I_C=5.0A, V_{CE}=3.0V$     | 200  | —   | —   |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | V    | $I_C=3A, I_B=12mA$          | —    | —   | 2   |
|                                      |               |      | $I_C=5A, I_B=20mA$          |      |     | 4   |
| Base-Emitter On Voltage              | $V_{BE(on)}$  | V    | $V_{CE}=3V, I_C=3A$         | —    | —   | 2.5 |
| Output Capacitance                   | $C_{ob}$      | pF   | $V_{CB}=10V, I_E=0, f=1MHz$ | —    | —   | 100 |

### ● Small-signal Characteristics

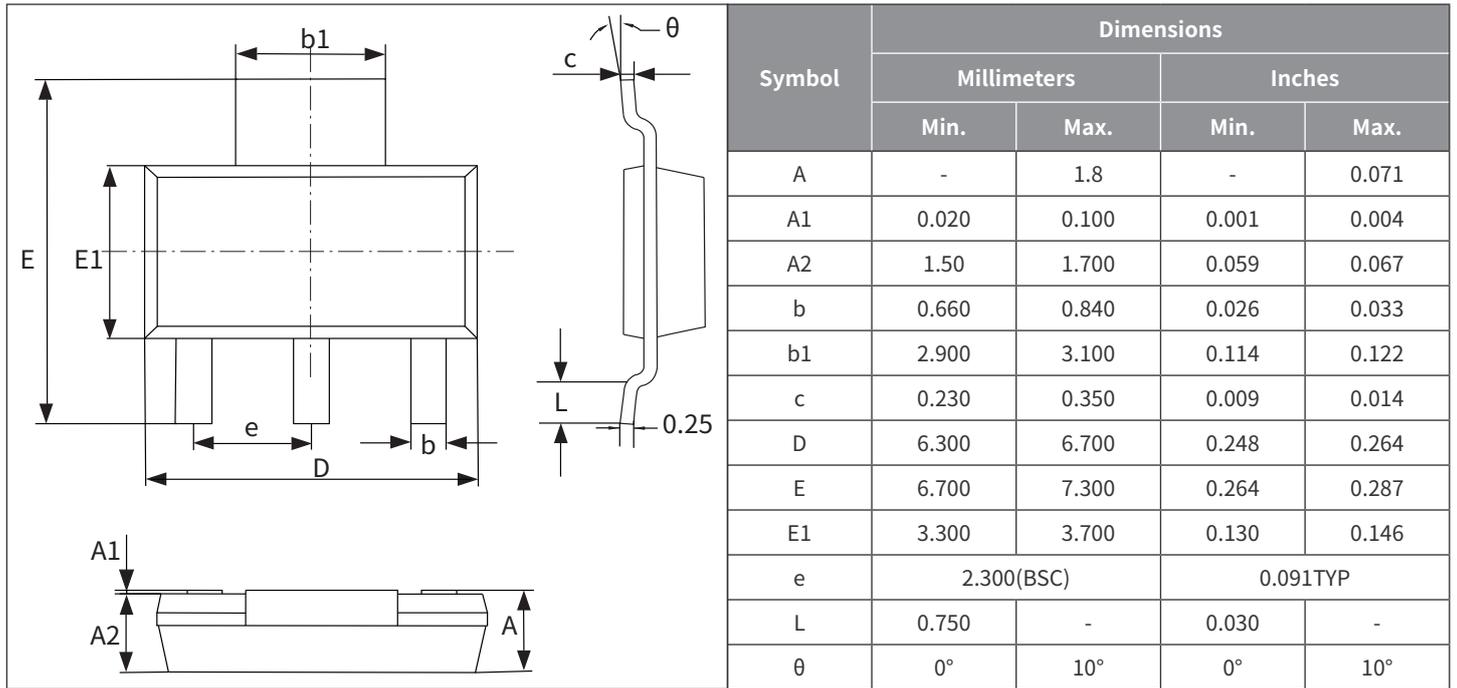
| ITEM                 | SYMBOL | Condition               | UNIT | Min | Typ | Max |
|----------------------|--------|-------------------------|------|-----|-----|-----|
| Transition frequency | $f_T$  | $I_C=0.75A, V_{CE}=10V$ | MHz  | 25  | —   | —   |

Note : Measured under pulsed conditions. Pulse width  $\leq 300$  us. Duty cycle  $\leq 2\%$

● Ratings And Characteristics Curves (Ta=25°C Unless otherwise specified)



● Package Outline Dimensions (SOT-223)



● Suggested Pad Layout

